NWS Partners Workshop 2002
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Draft Formats & Codes NWS Instructions (NWSI)

NWSI 10-1701, Text Product Formats and Codes
NWSI 10-1702, Universal Geographic Code (UGC)
NWSI 10-1703, Valid Time Event Code (VTEC)

Significant Changes in Draft Procedural Instructions Listed Above

NWS Instruction 10-1701, Text Product Formats and Codes (NEW Instruction)

This is a totally new Instruction (without an precedent WSOM chapter). It provides comprehensive information on text formats, from the WMO header and AWIPS ID to the MND block and the content block. It expands greatly on the little format information originally in old WSOM Chapter C-63, NOAA Weather Wire Service (NWWS) and other miscellaneous WSOM chpaters. URLs are also supplied, where appropriate.

Note that while examples of the individual formatting blocks are found throughout this new instruction, completed sample products are in NWS Instruction 10-1702, Universal Geographic Code (UGC), since the UGC's placement dictates the differing product formats.

Following are important new procedures in this new instruction and an identification of some of the more comprehensive formatting rules.

– In Section 2, Punctuation and Case, WMO Manual 386 only allows the following punctuation marks: the period, and ellipsis; the forward slash; the dash; and the plus. Other marks NWS permits in products to ensure automated processing and delivery are the double dollar, the double ampersand, and the greater than symbol in the UGC. Further exceptions to the WMO rules are in the Standard Hydrometeorological Exchange Format (SHEF) code, which uses standard punctuation (commas, colons, etc.) and upper and lower case, for coded and delimited data (i.e., SHEF puts raw data into usable form for automated processing and is used for interagency sharing of data, for visual and computer recognition). Other new exceptions are characters found in URLs and e-mail addresses, such as the "AT" (@) symbol. IMPORTANT NOTE: URLs and e-mail addresses should be limited to PNSs and administrative-type messages, as these are not likely to affect dissemination of high priority information on certain user's systems.

– In Section 3, Product Formats, information is provided, for the first time, on "End of Line," " End of Report," Length of Line," and "Length of product."

– In Section 3.1, NWS Communications Header Block, more explanation and detail is provided on the "BBB" field, found at the end of the WMO abbreviated header line.

– In Section 3.2, MND Header Block, on use of optional broadcast instructions (e.g., BULLETIN - IMMEDIATE BROADCAST REQUESTED, etc.)

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– Also in Section 3.2, Product Type line in the MND: information is presented on using the ellipsis and such terms at the end of the "product line" of the MND as "Updated" or "Amended," "Corrected," "Delayed," and two IMPORTANT additions: the use of "Resent" (instead of retransmitted because it is simpler language, shorter and less likely to be misspelled), and the use of the new term "TEST," when a product is used for test or drill purposes.

Note that while the following two items ($$; &&) are rightly included in the document on changes to NWS Instruction 10-1702, UGC, below, they are also included in this document because of their general applicability (i.e., the $$ and && are no longer tied only to products that use the UGC.

– **IMPORTANT NEW RULE**: The double dollar ($$) now **ends all products,** including**:** (1) Those products that don't use the UGC; (2) Non-segmented products that do use the UGC; and (3) continuing to end all segments of segmented products. This provides requested standardization for users and formatter creators.

– Further, the double ampersand (&&) optionally may be used to separate differing kinds of information in a product, even if the product does not contain the UGC. In other words, the use of && is not limited to products using the UGC.

NWS Instruction 10-1702, Universal Geographic Code (UGC) (from WSOM C-63, App. B)

This UGC Instruction is mostly a carryover from Appendix B, UGC, in old WSOM Chapter C-63, NOAA Weather Wire Service (NWWS). **Note, however, the following important procedural changes.**

– **IMPORTANT NEW RULE**: The double dollar ($$) now **ends all products**, including**:** (1) Non-segmented products that do use the UGC; and (2) continuing to end all segments of segmented products. This provides requested standardization for users and format creators.

- Information on use of the double ampersand (&&) previously included in the Short-Term Forecast OML f/w C-21 is rephrased into a general rule and added to the UGC Instruction. The && may be used to separate differing kinds of information in a products. Also, the use of && is not limited to products using the UGC.

– When a product is specified as a segmented product (e.g., a Winter Storm Watch/Warning/Advisory (WSW)) is issued for only one segment, the placement of the UGC within the content block is the same as that for any segment in a segmented product, i.e., the UGC is NOT placed after the Communications Header block. In other words, once defined as a segmented product, *always* a segmented product.

Draft NWS Instructions (NWSI)

Significant Changes in Draft Procedural Instructions Documents

NWS Instruction 10-1703, Valid Time Event Code (VTEC) (New Instruction)

The VTEC instruction was created from information in the March 2002 VTEC Implementation Plan (that's undergone several iterations over the years), with some important new procedures.

– It provides the rules for using a "primary" P-VTEC for those non-hydro products designated to use the VTEC, and a "hydro" H-VTEC for hydro products. Note that the H-VTEC is always used with the P-VTEC in hydro products, while in non-hydro products, only the P-VTEC is used.

– VTEC implementation will occur in phases primarily driven by formatter development. As of this writing, it's not clear which products will be implemented first, or when. A goal is to have the VTEC in certain hydro products implemented this fall (with possibly the WSW and Non-Precipitation Watch/Warning/Advisory (NPW) also, but that is still uncertain). Information on marine usage of VTEC will be included in a later version of this instruction when implementation plans are firmed.

– Note that the VTEC Instruction provides generalized instructions for any products to use the VTEC, but the examples are based on the aforementioned WSW and NPW, and certain hydro products.

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NATIONAL WEATHER SERVICE INSTRUCTION 10-1701

Operations and Services
Dissemination Services NWSPD 10-17

TEXT PRODUCT FORMATS AND CODES

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_____

Gregory A. Mandt Date
Director, Office of Climate,
Water, and Weather Services

Text Product Formats and Codes

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1. Introduction. Text product formats (i.e., communications header and trailer codes, plain language identification blocks, geographic identifier codes, etc.) are produced by the various Advanced Weather Interactive Processing System (AWIPS) formatters and other product generation systems. This instruction provides general guidelines on the formats and codes that are applicable to text products and is supplemented by on-line references as indicated in the text and by:

Interface Control Document (ICD) - "NWWS 2000 - External Message Formats"
on the Internet at: http://www.nws.noaa.gov/nwws/listings.html.

Completed examples showing the rules and formats described in this instruction are in NWSI 10-1702, Universal Geographic Code (UGC), since the various formats are dictated by the differing placements of the UGC within the product. NWSI 10-1703, Valid Time Event Code (VTEC), provides rules and examples for using the VTEC in certain products, in conjunction with the UGC.

For format, codes, and content, to be used in each specific product, see the respective Products Specification document on the Internet at: http://www.nws.noaa.gov/directives.

1.1 Mission Connection. The NWS mission to protect life and property is carried out by timely delivery through a variety of dissemination systems of warnings, watches, forecasts, and other relevant weather, flood, climate, and critical non-weather-related information under the "all hazards" concept. Correct use of product formats and codes is essential to ensure this delivery

and allow users to select, manipulate, and redistribute the information regardless of the dissemination method of receipt.

2. Punctuation and Case. In accordance with the World Meteorological Organization (WMO) Manual 386, write products using the following punctuation:

(Information on obtaining WMO Manual 386 is on the Internet at: http://www.nws.noaa.gov/tg/wmodocs.html.)

a. Narrative text uses upper case and only the following punctuation marks in the text: the period (.), including the three dot ellipsis (...); the forward slash (/); the dash (-); and the plus (+). Use of other characters may inhibit the proper dissemination or automated processing by certain users' systems.

b. Other permitted characters—only within the routinely coded part of specific products—are the double dollar ($$) and the double ampersand (&&), and the "right-angle" symbol (>) in the UGC (see NWSI 10-1702 on the UGC).

c. Exceptions:

(1) Certain primarily coded or tabular products, such as those using the NWS Standard Hydrologic Exchange Format, that use upper and lower cases and normal punctuation marks, such as commas (,), colons (:), etc., are permitted; and

(2) Other characters not allowed in a. or b. above that are in Internet site addresses (URLs) or e-mail addresses, such as the "AT" symbol (@), are permitted. **Important note:** URLs and e-mail addresses should be limited to administrative-type products and Public Information Statements. These products are less likely to adversely affect dissemination of high priority information on certain users' systems.

3. Product Formats. Paragraphs a. through f. below provide communications information that apply to all format blocks in products intended for the general public (excluding most coded data). Subsections 3.1 through 3.4 below provide information on the construction and appearance of the specific format blocks. Complete examples of product formats, including illustrations of the UGC, are found in NWSI 10-1702.

a. A blank line: Insert it as a separator between the major format blocks, i.e., between the NWS Communications Identifier (CI) Block (section 3.1) and the Mass News Disseminator (MND) header block (section 3.2), and between the MND header block and the content block (section 3.3). Also insert a blank line within the MND header block to separate any headline(s) from the rest of the MND text. Optionally, use a blank line after the content block for a product or

segment and before the $$ (see NWSI 10-1702, section 4). Blank lines are visual aids for easier reading.

b. The UGC: Identifies the affected area of the product and the product purge time (see note below) and is used in most products. Depending on the class of product as defined in Products Specification documents, place the UGC within the product in one of two ways:

(1) For non-segmented products, immediately after the CI block (without an intervening blank line) (see section 3.1); or

(2) For segmented products (within one product header), to begin each of a series of segmented narrative texts immediately after the MND header block (see section 3.2).

Note: The Universal Coordinated Time (UTC) in the UGC is the product purge time, as distinguished from the product issuance time in the WMO abbreviated heading line (part of the CI; see section 3.1.a).

c. End-of-line: All lines of a message between the communications start-of-message and end-of-message should end in (a three-character) carriage-return carriage-return line-feed. The AWIPS formatters and message handling system normally provide this.

d. End-of-report: For products containing discreet observations, reports or Terminal Aerodrome Forecasts, each discrete part should have an equal sign (=) at the end of the last word or line of the discrete part as described in the Products Specification documents. The equal sign is followed immediately by an end-of-line. Note: If text products exceeds the 15,000 character message limit, this can also be used to break them into discrete parts during message transmission.

e. Length-of-line: All lines of a message should be 69 characters or less. Note: This does not normally include the three-character end-of-line, however when feasible, it is recommended this also include the end-of-line. This leaves 66 characters for actual text.

f. Length of product: When feasible, products should be kept under 15,000 characters. If a product exceeds 15,000 characters, it may be segmented for transmission either by AWIPS or by processing sites such as the NCF or the NWSTG. Note: The end-of-report (see para 3.d.) can be used to help create a logical break point for segmentation.

3.1 NWS Communications Identifier (CI) Block. The CI block begins all text products and consists of a start-of-message code (see note below), the World Meteorological Organization (WMO) abbreviated heading, and the AWIPS identifier.

The CI uniquely identifies the specific product, the area to which it applies, the originating office, the issuance office (often the same as the originating office), and the product issuance time. AWIPS produces these fields automatically from information derived from operator input.

Note: See appropriate communications documents for specific (printable and non-printable) start-of-message codes used for the various dissemination systems. These codes are not visible on AWIPS. For this Instruction, all examples will use the "##" to indicate a communications start-of-message code.

a. **World Meteorological Organization (WMO) abbreviated heading** is in the form: TTAAii CCCC DDHHMM BBB [BBB field used as appropriate*]

where:

TTAAii = data type/location;
CCCC = 4-letter identifier of issuing office;
DDHHMM = product issuance date/time in UTC;
BBB = general designator for either product amended/updated, corrected, or delayed.*

- If amended/updated BBB = AAx;
- If corrected BBB = CCx;
- If delayed, BBB = RRx.

In all cases, x = A, B, C...X, i.e., AAA = 1st amendment or update to the same product; CCB = 2nd correction to the issuance of the same product, etc. through X if needed. After X, Z should be used for each additional case. More information on using the BBB group is in section 3.2.

Important Note: The WMO abbreviated heading in the formatter must include a BBB field, as appropriate.

b. **AWIPS identifier** (AI) is in the form: NNNXXX

where:

NNN = specific product category (must be three characters);
XXX = originating office or area designator (this XXX field must contain 3 characters. If only one or two characters are printable, spaces are added).

For details on the structure of the CI, see the Office of the Chief Information Officer (OCIO) document:

"Communications Identifier Policy For: Operational NWS Communication Networks And Systems" for explanations, examples, and product lists.

Also, this information and other communications codes, such as for amended or corrected, are on the OCIO's Telecommunications Operations Center Internet site at: http://www.nws.noaa.gov/tg/head/html.

Following is an example of a CI for a Zone Forecast Product (ZFP) issued by Weather Forecast Office (WFO) Baltimore/Washington (LWX) for April 24, 2002, issuance time 0822 UTC.

```
##                    (appropriate start-of-message communications code)
FPUS51  KLWX 240822 (WMO abbreviated heading)
ZFPLWX              (AWIPS identifier)
```

3.2 Mass News Disseminator (MND) Header Block. The following paragraphs a. through d. below provide the rules for each line of the MND header block Examples of the MND header block are at the end of this section.

a. Optional Broadcast Instructions. This line includes one of the following phrases, in descending order of urgency, whether originated from the NWS for certain critical weather, flood, marine, or fire warnings, etc., or at the request of the external authorizing agency for non-weather-related emergency messages:

- BULLETIN - EAS ACTIVATION REQUESTED
- BULLETIN - IMMEDIATE BROADCAST REQUESTED
- URGENT - IMMEDIATE BROADCAST REQUESTED

Notes: (1) The use of EAS ACTIVATION REQUESTED or IMMEDIATE BROADCAST REQUESTED is at the discretion of state and local Emergency Alert System (EAS) committees; and (2) A dash (-) separates BULLETIN or URGENT from any other instructions in that line.

The use of BULLETIN and URGENT follows convention established by the print and electronic media. These terms signify levels of dissemination urgency. The NWS only uses BULLETIN and URGENT in weather-related messages, but other instructions may be used at the request of the external authorizing agency in non-weather-related emergency messages. Here is the complete list of broadcast instructions for non-weather-related messages:

- FLASH - Used only for world changing events, such as a Presidential assassination
- BULLETIN - Used when the information is sufficiently urgent to warrant breaking into the normal broadcast
- URGENT - Used when the information may wait until a "stop-set" (break in the broadcast routine)
- REGULAR - Used when the information should be broadcast at regular news times
- HOLD - Do not broadcast at this time; may be upgraded or updated with a higher priority later.

b. Product Type. This MND line contains the name of the specific product being issued, e.g., ZONE FORECAST, STATE WEATHER ROUNDUP, TROPICAL CYCLONE DISCUSSION, SPECIAL MARINE WARNING, FLOOD WARNING.

Following are additional terms that may be included at the end of the Product Type line, as appropriate.

Important Note: When issuing a product for test or drill purposes, use the word TEST (as shown in the Test paragraph below), but add the word TEST or DRILL, as appropriate, in a headline and liberally within the body of the text.

- Updated or Amended: An ellipsis (...) and the word UPDATED or AMENDED follows the name of the product, as appropriate. AAx is also included in the BBB field with an updated time field in the WMO abbreviated heading (see section 3.1.a).

- Corrected: An ellipsis and the word CORRECTED follows the name of the product. CCx is also included in the BBB field and the original time field of the WMO abbreviated heading (see section 3.1.a).

- Resent (retransmitted): An ellipsis and the word RESENT follows the name of the product. No BBB field is included.

- Delayed: An ellipsis and the word DELAYED follows the name of the product. RRx is also included in the BBB field of the WMO abbreviated heading (see section 3.1.a).

- Test: The word TEST and an ellipsis begins the Product Type line, and an ellipsis and the word TEST follows the name of the product. No BBB field is included.

c. Issuing office. This MND line contains the words NATIONAL WEATHER SERVICE followed by the issuing office's CITY and STATE. Use the standard U.S. Postal Service two-letter state abbreviation (SS).

Two special cases:

(1) When a product is issued by a backup office, the office with the primary responsibility (that cannot issue the product) continues in the "issuing office" line as described above, but another "issuing office" line that begins with ISSUED BY immediately follows with the backup office name. (The NWS CI is that of the primary office.) For example:

NATIONAL WEATHER SERVICE CITY SS (Primary office)
ISSUED BY NATIONAL WEATHER SERVICE CITY SS (backup office)

(2) When a non-weather-related civil emergency or other critical product is originated by an external agency, but disseminated by the NWS office it was sent to, two "issuing office" lines again are included in the MND header block. The first includes the external agency information; the second line begins with RELAYED BY the NWS office. For example:

EXTERNAL AGENCY (city/county/or state name) SS
RELAYED BY NATIONAL WEATHER SERVICE CITY SS

d. Issuance date/time (in local time). This MND line contains the format (HHMM AM/PM LST or LDT) followed by the day of the week (three-letter abbreviation), the month (three-letter abbreviation), date, and year, all separated by one space.

Note: In segmented products, the date/time line is repeated in each segment. It occurs on the last line of the UGC block (including any associated plain language names, and any VTEC line[s]), and before the main text of the content block. See NWSI 10-1702, section 4.2, for examples.

Following are examples of MND header blocks (the first example provides an identification key of each MND line in parentheses).

- BULLETIN - EAS ACTIVATION REQUESTED (Optional broadcast instructions)
  TORNADO WARNING (Product type)
  NATIONAL WEATHER SERVICE RALEIGH NC (Issuing office)
  320 PM EDT THU MAY 23 2002 (Issuance date/time - local time)

- MISSOURI ZONE FORECASTS...CORRECTED
  NATIONAL WEATHER SERVICE ST LOUIS MO
  430 PM CST SAT MAR 16 2002

- SPECIAL WEATHER STATEMENT...RESENT
  NATIONAL WEATHER SERVICE SALT LAKE CITY UT
  515 AM MDT TUE NOV 19 2002

3.3 Product Content Block. This is the main, informational part of any product and occurs after the MND block and a blank line and before the communications trailer. The content block is defined as all information (including narrative text and/or data, and any optional Internet addresses) provided in the product and described in the Products Specification document; any UGC block, i.e., the UGC line(s) and optionally their associated plain language names (see NWSI 10-1702, section 3.h); any VTEC lines (see NWSI 10-1703); any headlines; the optional && code (see section 3.3.2), and the $$ code (see section 3.3.3).

The narrative text should, in general, use a concise style, avoiding acronyms and offensive language, and be mission related. Content will vary according to the individual product or class of products as described in the respective Products Specification document.

3.3.1 Headlines. One or more headlines optionally may begin the narrative part of the content block, usually after the UGC block (and any VTEC lines). Each headline must be on a separate line and be preceded and followed by an ellipsis (three dots) and, at a minimum, include the what, where, and when (or time inference) of the event. A blank line should separate any headline(s) from the rest of the content block. For example:

...TORNADO WARNING FOR COUNTY XX UNTIL 530 PM...

In following the punctuation rules mentioned in section 2, the ellipsis also must be used within the headline, as appropriate, in place of the comma.

3.3.2 Content-Type Separator Code (Double Ampersand [&&] - Optional). The && code may be used optionally to separate differing kinds of information within the content block of a product, or within a segment(s) of a segmented product. The && also may be used in a product that does not include the UGC block. Refer to individual Products Specification documents for use in specific products.

3.3.3 End of Product or Product Segment Code (Double Dollar [$$]). **The double dollar code ($$) is used to end the content block of all products**, i.e., (1) those products that do not use the UGC, and (2) non-segmented products that do use the UGC. The $$ also is used to end the content of individual segments within a segmented product.

Note: Complete examples showing the rules and formats described in this Instruction, including use of the && and $$, are in NWSI 10-1702.

3.4 Forecaster Identifier (Optional). Forecasters may affix their initials or some other form of identifier at the end of the product content block. Providing this optional identification in the various NWS products depends on guidelines in the appropriate Products Specification document.

3.5 Communications Trailer. This is the communications end-of-message code. It may be visible on certain user devices, but not on AWIPS.

Note: See appropriate communications documents for specific (printable and non-printable) end-of-message codes used for the various dissemination systems. For this directive, all examples will use the "**" to indicate a communications trailer code.

NATIONAL WEATHER SERVICE INSTRUCTION 10-1702

Operations and Services
Dissemination Services NWSPD 10-17

UNIVERSAL GEOGRAPHIC CODE (UGC)

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Gregory A. Mandt
Director, Office of Climate,
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Date

Universal Geographic Code (UGC)

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1. Introduction. The World Meteorological Organization (WMO) abbreviated heading and Advanced Weather Information Processing System (AWIPS) identifier (together they are called the National Weather Service Communications Identifier) in many cases do not provide sufficient geographic identification of the affected area and do not provide the product purge time (i.e., the time when the product should no longer be used). The Universal Geographic Code (UGC) is used in many text products to provide that additional geographical and temporal information.

The UGC specifies (1) the affected geographic area of the event, typically by state, county (or parish), or unique NWS zone (land and marine), and (2) the product "purge time". This allows users easy automated processing and redistribution of the information to site-specific locales.

Complete examples of use of the UGC and the other formatting rules, including use of the double dollar ($$) and the double ampersand (&&) described in NWSI 10-1701, Text Product Formats and Codes, and this Instruction, are in section 5.

For information on form and format of UGC for specific products, see the appropriate Products Specification document.

1.1 Mission Connection. The NWS mission to protect life and property is carried out by timely delivery through a variety of dissemination systems of warnings, watches, forecasts, and other relevant weather, flood, climate, and critical non-weather-related information under the "all hazards" concept. Correct use of product formats and codes is essential to ensure this delivery and allow users to select, manipulate, and redistribute the information regardless of the dissemination method of receipt.

2. UGC Elements. Each complete UGC group consists of the following:

a. Six alphanumeric characters (SSFNNN) followed by a dash (-). The three-letter prefix (SSF) represents the state and UGC format. The three-number suffix (NNN) represents the affected counties or zones; and

b. Six numeric characters (DDHHMM), followed by a dash, representing the product purge time (in Coordinated Universal Time [UTC]).

Note: The product purge time in the UGC (in UTC) is the time when the product should no longer be used. It is different than the product issuance time (in UTC) in the WMO abbreviated heading and in the plain language date/time (in local time) of the Mass News Disseminator header (see NWSI 10-1701, section 3.2).

Each complete UGC group, or NNN subgroup when it stands alone, and the date/time must be followed by a dash (-).

The generic form of the UGC is:

SSFNNN-NNN>NNN-SSFNNN- ... SSFNNN-DDHHMM-
in which:

SS = two-letter standard Post Office state identifier.

F = UGC format, either:
= 'C', means the NNN following represents a county or independent city; or
= 'Z', means the NNN following represents a unique NWS zone.

NNN = after 'C', the FIPS county or independent city number; or
= after 'Z', the NWS zone number, or the characters "ALL" representing ONLY all of the zones in a state, or the numbers "000" used by certain National Centers (NC) representing all, or an unspecified part, of a state.

DDHHMM = the product purge date (DD), hour (HH), and minute (MM) in UTC.

- = code separator/end of code.

> = optional indicator of consecutive sequence of NNNs. Only used with zone NNNs.

Two additional formatting symbols, not part of, but typically used in conjunction with, the UGC grouping, are:

$$ = end of the content block of a product or product segment (see section 3.k of this Instruction).

&& = optional content-type separator of differing kinds of information in a product or product segment. May be used in products that do not include the UGC block (see section 3.l of this Instruction).

3. UGC Rules. Following are the rules for using the UGC.

a. County or Zone Form of UGC. Use either the county (C) form or the zone (Z) form of the UGC, but NOT both, in any product. Refer to the appropriate Products Specification document for specific guidance.

The majority of the products use the county (C) form of the UGC. A few products that use the zone (Z) form of the UGC include public zone forecasts, non-precipitation watch/warning/advisories, winter storm watch/warning/advisories, short term forecasts, and certain marine products that use special marine zones.

b. The list of FIPS county and politically independent city numbers is managed by the Census Bureau. Each county/independent city has a unique FIPS number, typically using only odd numbers (001, 003, 005, etc.), with the even numbers reserved for additional future use. This numbering sequence is repeated for each state. Note that FIPS numbers (001, 003, 005, ... NNN) are not a consecutive string, therefore, cannot be used with ">"(see section 3.f below). The FIPS list is on the NWS Internet site at: www.nwips.noaa.gov.mapdata/newcat.

For rules on the use of marine zones, see NWS Instruction 10-302, Marine and Coastal Service Areas of Responsibility.

c. If two or more counties or zones from the same state are included in the UGC grouping, the state SS will not be repeated after the first county grouping, only the particular NNNs. For example: MOC001-005-009-DDHHMM- means Missouri counties 1 (Adair), 5 (Atchison), and 9 (Barry). For handling marine zones, see reference in b. above.

d. When there are two or more county or zone numbers in a UGC grouping, the numbers do not have to be in the preferred numerically increasing order, e.g., for Maryland zones 3, 5, and 7, the UGC could be: MDZ005-003-007-DDHHMM-.

e. If counties or zones for two or more states are included in the UGC, the UGC for each new state will begin with a complete 6-character grouping. For example: PAZ015-WVZ001-DDHHMM- means Pennsylvania zone 15 and West Virginia zone 1.

f. Consecutively numbered zones (but NOT counties) in a state are indicated by an inclusive right-angle bracket (>). For example: TXZ001>005-DDHHMM- means Texas zones 1 through 5, inclusive.

Important note: Do not use the > to indicate a string of county FIPS numbers, such as 001-003-005-, etc., because the numbers are not technically consecutive, i.e., the even numbers are missing, in most cases.

g. If ALL zones of an entire state are included in a product's UGC, NWS offices may use either the NNN = ALL or, using the >, NNN = 001>NNN (where NNN = the highest numbered zone for that state). For example, all (102) zones in Tennessee can be represented as either TNZALL- or TNZ001>102-. If ALL counties in a state are included, NWS offices can only use the NNN = ALL option. For example, all counties in Tennessee (FIPS #s from 001 to 189) can be represented only by TNCALL-.

Certain NC products may use the NNN = 000 to indicate all, or an unspecified part, of a state.

h. If plain language names of the associated UGCs are included, the names will occur immediately after the UGC line(s). Each name will be followed by a dash (-). (When the Valid Time Event Code is used, it occurs immediately after the UGC line[s], with the associated plain language names following. See NWSI 10-1703.)

i. If a UGC grouping requires more than one line, each line must end with a dash (-). In other words, an end of line cannot break into a full SSFNNN group. Only one DDHHMM- will be used and occur at the end of the last UGC line (not at the end of each UGC line). The "SSF" sub-group will not be repeated in the middle of a string or at the beginning of a second or subsequent line.

j. The product purge date/time DDHHMM in UTC depends on the content and type of product. For example, the purge time for short-fuse warnings typically is less than an hour, while for longer-term events, the purge time may extend to 6 hours or longer.

Following are rules for using the $$ and &&.

k. **The double dollar code ($$) is used to end the content block of all products**, i.e., (1) those products that do not use the UGC, and (2) non-segmented products that do use the UGC. The $$ also is used to end the content of individual segments within a segmented product.

l. The double ampersand (&&) optionally may be used to separate differing kinds of information (e.g., narrative text, tabular data) within the content block of a non-segmented product or within a segment of a segmented product. It occurs before the $$ and therefore does NOT end a product or segment. The && also may be used in products that do not use the UGC. Individual Products Specification documents define its use in specific products.

4. UGC Placement. There are two formats for the placement of the UGC within a product.

Notes:
(1) For all following examples in sections 4.1 and 4.2, the (printable and non-printable) communications header and trailer codes will be represented by ## and **, respectively.

(2) Example 1 generically identifies each line of the format in parentheses. Only where new information is presented in the other examples are those lines also identified in parentheses.

(3) Some products include the associated plain language names of zones after the UGC line. Some products include broadcast instructions in the MND.

(4) For rules and examples of specific products and content, where variations may occur, refer to the appropriate Products Specification documents.

4.1 Format 1 - Non-segmented Product. This format is used for products that apply in their entirety to the geographic areas listed in the UGC. In this format, the UGC is placed on the line immediately after the NWS Communications Identifier (CI) (includes the WMO abbreviated heading and AWIPS identifier) of the communications header block (see NWSI 10-1701). This applies to the majority of products, including, but not limited to, severe local warnings, watches, advisories, certain statements, summaries, and most state forecast products.

Examples:

a. For an entire state (or states)

Example (1) - includes headline

##	(Communications codes)
FPUS63 KBIS 291624 AAA	(WMO heading - AAA = 1st update)
SFPND	(AWIPS identifier)
NDZ001>054-292130-	(UGC - ND zones 1-54)
	(Blank line)
STATE FORECAST FOR NORTH DAKOTA...UPDATED	(3-line MND block)
NATIONAL WEATHER SERVICE BISMARCK ND	
1120 AM CDT MON APR 29 2002	
	(Blank line)
...HEADLINE...	(Optional - in selected products)
TEXT	
	(Blank line - optional)
$$	(End of text)
XYZ	(Forecaster ID - optional)
**	(Communications code)

Note: In the above example, the UGC line could have been NDZALL-292130- because North Dakota zones 1-54 are ALL the zones in the state.

b. For parts of one (or more) state(s)

Example (2) - includes broadcast instruction

```
##
WUUS54 KTSA 301156
SVRTUL
ARC015-301245-

BULLETIN - EAS ACTIVATION REQUESTED                (Broadcast instruction)
SEVERE THUNDERSTORM WARNING
NATIONAL WEATHER SERVICE TULSA OK
656 AM CDT TUE APR 30 2002

...HEADLINE...
TEXT

$$
**
```

Example (3) - multiple states in UGC line, and optional use of &&

```
##
WGUS43 KFGF 300407
FLWFAR
MNZ001>005-007-013>015-029-NDZ007-008-016-017-030-038-039-049-053-300800-

HYDROLOGIC SUMMARY
NATIONAL WEATHER SERVICE EASTERN NORTH DAKOTA/GRAND FORKS
933 PM CDT MON APR 29 2002

TEXT/DATA
&&                                 (optional separator of differing kinds of content)
TEXT/DATA                          (text continues)

$$
**
```

Example (4) - multiple states included in multiple UGC lines

##
AWUS81 KRNK 140726
RWSRNK
NCZ001>006-018>020-VAZ007-009>020-022>024-032>035-043>047-
058-059-WVZ042>045-142030-

REGIONAL WEATHER SUMMARY
NATIONAL WEATHER SERVICE BLACKSBURG VA
322 AM EDT TUE MAY 14 2002

TEXT

$$
**

Notes:
(1) In the above examples 3 and 4, each new state must begin with a full 6-character UGC group and cannot be broken by a line ending.

(2) Example 4 also shows that (a) when there is more than one line of UGC, each line must be ended with a dash (-), with the date/time group only at the end of the last line, and (b) the "SSF" (in this case "VAZ") is not repeated when a continuation of VA zones wrap around to multiple lines.

4.2 Format 2 - Segmented Product. This format is used for a product where different segments apply to separate geographical areas but are all included in one communications identifier (i.e., within one product). For these segmented products, a unique UGC block, along with any associated plain language names, (and any VTEC lines]), and a repeat of the date/time line from the MND, is placed at the beginning of each segment (after the initial MND header) and a $$ at the end of each segment. Examples of segmented products include, but are not limited to, zone forecasts, partitioned state forecasts, many long-fuse statements, and certain summaries and roundups.

Important note: When a segmented product is issued for only one segment (e.g., an update to one zone segment of a multi-segmented Zone Forecast Product), the UGC placement within the one segment follows format 2 described above.

Example (5) - segmented product includes plain language names of zones and cities and is updated

##
FPUS55 KRIW 291802 AAA
ZFPRIW

WESTERN AND CENTRAL WYOMING ZONE FORECASTS...UPDATED
NATIONAL WEATHER SERVICE RIVERTON WY
1201 PM MDT MON APR 29 2002

WYZ015-292145-
NATRONA-
INCLUDING THE CITY OF...CASPER
1201 PM MDT MON APR 29 2002

...UPDATED WIND SPEED AND DIRECTION THIS AFTERNOON...

TEXT

$$

WYZ012-013-292145-
LANDER FOOTHILLS-WIND RIVER BASIN-
INCLUDING THE CITIES OF ...LANDER...RIVERTON
1201 PM MDT MON APR 29 2002

...UPDATED FOR AFTERNOON AREAS OF WIND...

TEXT

$$
**

(Plain language zone/city names)

Example (6) - segmented product - corrected

##
FPUS66 KSEW 291347 CCA
SFPWA

(CCA = 1st corrected version of product)

STATE FORECAST FOR WASHINGTON...CORRECTED
NATIONAL WEATHER SERVICE SEATTLE WA
645 AM PDT MON APR 29 2002

...CORRECTED WESTERN WASHINGTON FOR PDT...

WAZ001>023-039-040-292300-
STATE FORECAST FOR WESTERN WASHINGTON...CORRECTED
NATIONAL WEATHER SERVICE SEATTLE WA
645 AM PDT MON APR 29 2002

TEXT

$$

WAZ024>038-041>044-292230-
STATE FORECAST FOR EASTERN WASHINGTON
NATIONAL WEATHER SERVICE SPOKANE WA
330 AM PDT MON APR 29 2002

TEXT

$$
**

Example (7) - segmented product, includes plain language names of zones and cities and broadcast instruction

##
WWUS41 KCAR 290201
WSWCAR

URGENT - IMMEDIATE BROADCAST REQUESTED (broadcast instruction)
WINTER WEATHER WARNING
NATIONAL WEATHER SERVICE CARIBOU ME
1000 PM EDT SUN APR 28 2002

...HEADLINE...
TEXT (SYNOPSIS)

MEZ010-011-031-032-291600-
CENTRAL PENOBSCOT ME-CENTRAL PISCATAQUIS ME-
NORTHERN WASHINGTON ME-SOUTHERN PISCATAQUIS ME-
INCLUDING THE CITIES OF...BROWNVILLE JUNCTION...DANFORTH...DOVER-
FOXCROFT...GREENVILLE...GUILFORD...HOWLAND...LINCOLN AND VANCEBORO
1000 PM EDT SUN APR 28 2002

...HEADLINE...
TEXT
$$

MEZ003>006-291600-
(associated zone/city names)
1000 PM EDT SUN APR 28 2002

...HEADLINE...
TEXT
$$
**

NATIONAL WEATHER SERVICE INSTRUCTION 10-1703

Operations and Services
Dissemination Services NWSPD 10-17

VALID TIME EVENT CODE (VTEC)

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Director, Office of Climate,
Water, and Weather Services

Date

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Valid Time Event Code (VTEC)

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1. Introduction. The Valid Time Event Code (VTEC) is used in conjunction with the Universal Geographic Code (UGC) (see National Weather Service Instructions (NWSI) 10-1702 for a description of UGC) to further aid in the automated delivery of National Weather Service (NWS) text products to users.

There are two VTECs described in this document: (1) a "primary" (P)-VTEC and (2) in certain hydrological products, a supplementary hydrological (H)-VTEC that always is used in conjunction with, and occurs on the line immediately after, the P-VTEC. The P-VTEC rules and format are described in sections 1 - 3; the H-VTEC rules and format, providing flooding information for certain products, are described in sections 4 and 5.

The Advanced Weather Information Processing System (AWIPS) formatters automatically produce the P-VTEC and H-VTEC line(s) in the appropriate products, without forecaster intervention.

1.1 Mission Connection. The NWS mission to protect life and property is carried out by timely delivery through a variety of dissemination systems of warnings, watches, forecasts, and other relevant weather, flood, climate, and critical non-weather-related information under the "all hazards" concept. Correct use of product formats and codes is essential to ensure this delivery and allow users to select, manipulate, and redistribute the information regardless of the dissemination method of receipt.

1.2 Implementation. The implementation of P-VTEC and H-VTEC in products will occur in phases. This current document describes the first implementation phase of VTEC, and includes the following products using the P-VTEC:

Winter Storm Watch/Warning/Advisory (W/W/A) products (WSW);
Non-Precipitation W/W/A products (NPW);

and the following hydrological products using the P-VTEC and H-VTEC:

Flood Warning (Rivers) (FLW)
Flood Statement (Rivers) (FLS)
River Statement (RVS)
River Summary (RVA)
River Forecast Product (RVD)
Flood Watch (FFA).

The goal is for all event-driven products that include the UGC to include the P-VTEC and, where appropriate, also the H-VTEC. This document will be updated with each new phase of VTEC implementation.

(NOTE to REVIEWERS: the first phase might only include the hydro products mentioned above. Still TBD. In any case, the examples using the WSW and NPW correctly illustrate the rules for the P-VTEC.)

1.3 Basic Definitions of the VTEC.

a. The **P**-VTEC identifies characteristics of the event(s), including (1) its status, type, and tracking number, and (2) the event(s) beginning and ending time(s) (see section 1.5).

b. The **H**-VTEC identifies occurs only in conjunction with, and immediately after, the P-VTEC line when the Phenomena Code in the P-VTEC is FL for Flood. The H-VTEC specifies the flood severity, immediate cause, timing of flood beginning, crest, and end, and whether the flood will be (near) a record.

1.4 Event vs. Product. It is important to understand the distinction between an "event" and a "product" to use the P-VTEC properly.

a. **Event**: A specific combination of phenomena (e.g., type of weather, flood) and significance level of alert (e.g., watch, warning, advisory). See Appendix A for a list of phenomena and significance levels. Common examples of events described in this document include Winter Storm Watch, High Wind Advisory, Flood Warning.

b. **Product**: The entire message issued to the public, that may include information on one or more events. Products described in this document are mentioned in section 1.2.

For example, if "heat" is the phenomena and "advisory" is the significance level, then a "heat advisory" is the event and the public receives the information by the NPW product. Similarly, a blizzard warning and a lake effect snow advisory are each events. The public receives the information in a WSW product.

1.5 Product Purge Time vs. Event Ending Time.

a. **Product Purge Time:** Found at the end of the last UGC group for an event, it is the time the product should no longer be used. In long-fuse W/W/A products, such as WSW and NPW, the product purge time is the time when customers can expect to receive an updated product.

b. **Event Ending Time**: The last group of the P-VTEC line, it is the time when the event is no longer valid.

2. Primary (P)-VTEC Format. The P-VTEC line(s) (and any H-VTEC line[s]) occurs immediately after the UGC line(s) and before any plain language listing of zones or counties affected or other words identifying the affected area that corresponds to the UGC line(s). This is true for segmented and non-segmented products.

2.1 Generic Structure of P-VTEC Elements.

/aaa.cccc.pp.s.####.yymmd$_{BdB}$ThhnnZ-yymmd$_{EdE}$ThhnnZ/

where "aaa.cccc.pp.s.####" is the "event," and yymmddThhnnZ-yymmddThhnnZ is the beginning and ending date/time, respectively.

Event Group		Date/Time Group	
aaa	- Action	**yy**	- Year
cccc	- Office ID	**mm**	- Month
pp	- Phenomena	**d_bd_bThhnn**	- Event Beginning Date/Time group
s	- Significance	**d_Ed_EThhnn**	- Event Ending Date/Time group
####	- Event Tracking Number (ETN)	**Z**	- Universal Coordinated Time

Notes:
(1) The "T" in the Date/Time Groups is a fixed Time Indicator, with the following "hh" and "nn" being the hours and minutes in UTC, respectively. The Z is the fixed UTC indicator.

(2) '/' and '**.**' in the format are delimiters that separate fields for ease in coding and decoding.

2.2 P-VTEC Element Definitions.

2.2.1 **aaa** (Action): Identifies the issuance status of the event. It specifies whether the event is "New," "Continued," "Extended," "Upgraded," "Cancelled," "Corrected," or "Expired," or if an issuance is for "Test" purposes.

Action Code Definitions:

NEW (NEW) - Used for an initial issuance of an event. Also used for an event that has replaced another event for the same area, as when an event is upgraded (see the "UPG" action term below).

CON (CONTINUED) - Used when providing updates to an existing event, where no changes were made to the area, valid time period or Significance category.

EXT (EXTENDED IN TIME) - The valid time period of an existing event has been made longer or shorter by changing either the Event Beginning or Ending Date/Time Group.

EXA (EXTENDED IN AREA) - The valid area of the W/W/A has been expanded from its initial issuance.

EXB (EXTENDED IN BOTH TIME AND AREA) - The valid time period and valid area of the W/W/A have been extended.

UPG (UPGRADED) - Used when an event for the same area is upgraded to a higher significance level, e.g., from a watch to a warning or advisory, and from an advisory to a warning. Two P-VTEC lines are used: The UPG is used in the first P-VTEC line to show the event being upgraded from (e.g., an advisory) and the NEW is used in the second P-VTEC line to show the event upgraded to (e.g., a warning).

CAN (CANCELLED) - Used when an event has been cancelled before its Event Ending Date/Time Group.

EXP (EXPIRED) - Used when the Event Ending Date/Time Group has been reached and the event is no longer active.

ROU (ROUTINE) - Used mainly for marine products when there are no W/W/As in effect.

COR (CORRECTION) - Used when correcting any errors to a previous message, including a change to the coding, area affected, text wording, etc.

TES (TEST) - Used when the message has been issued strictly for test purposes.

2.2.2 **cccc** (Office ID). The standard four-letter identifier indicating the NWS office with the primary responsibility for the affected area. The office ID is the same as that in the plain language Mass News Disseminator (MND) header. Any NWS office providing backup service will use the primary office's cccc.

2.2.3 **pp** (Phenomena). Identifies the type of weather (or non-weather) occurrence (e.g., high wind, freezing rain, avalanche). See Appendix A for the Phenomena codes.

2.2.4 **s** (Significance). Identifies the level of alert (e.g., watch, warning, advisory, etc.) of the weather or non-weather occurrence. See Appendix A for the Significance codes.

2.2.5 #### (Event Tracking Number - ETN). The ETN is assigned sequentially by AWIPS for each type of event issued by each office, starting with 0001 for the first event of its type for the calendar year. A new ETN is assigned when first issuing the event, and the same ETN is carried when the event is continued, cancelled or extended (in area, time or both). The ETN is incremented each time a new weather system causes the same event type to be issued. If backup service is required from another office, the primary office's ETN is used.

For products (e.g., WSW, NPW) that may include more than one event, each specific event within the product will have its own ETN. For example, an office issues a WSW product early in the calendar year with the following segments (each describing a specific event for a specific geographic area) and corresponding ETNs:

Event	ETN
(1) Blizzard Warning	0002 (2nd Blizzard Warning of the year)
(2) Winter Storm Warning	0004 (4th Winter Storm Warning of the year)

Two weeks later, a new weather system causes the same office to issue a WSW with the same order of segments, with the following corresponding ETNs:

Event	ETN
(1) Blizzard Warning	0003 (3rd Blizzard Warning of the year)
(2) Winter Storm Warning	0005 (5th Winter Storm Warning of the year)

A broad weather system may cause several offices to issue the same event for their area of responsibility, say a Winter Storm Watch, within a WSW product. That watch may have different ETNs from each issuing office, depending on how many prior Winter Storm Watches each office issued.

2.2.6 **yymmd$_B$d$_B$ThhnnZ and yymmd$_E$d$_E$ThhnnZ** (Event Beginning and Ending Date/Time Groups). These groups, respectively, identify the valid time period of the event in UTC.

a. **Event Beginning Date/Time Group** identifies when the event (e.g., Lake Effect Snow Advisory) will become effective. This will not necessarily correspond with the product issuance date/time in the MND header (in local time) and in the World Meteorological Organization abbreviated header (in UTC).

b. **Event Ending Date/Time Group** identifies when the event will no longer be in effect. This will not necessarily correspond to the product purge date/time found at the end of the last UGC group (in UTC).

Special coding of the **Event Beginning Date/Time Group** is used when an action (continued, extended in area/time, upgraded, cancelled or expired) has been taken after an event has begun. In these cases, the yymmd$_B$d$_B$ThhnnZ is coded with ten zeros (000000T0000Z). This will prevent an accidental invalidation of an ongoing event. Similarly, updates to an event (e.g., further information on a watch or warning that was issued previously) will cause the yymmd$_B$d$_B$ThhnnZ to be coded "000000T0000Z" to indicate the event is ongoing (i.e., not new) and not a new issuance.

Examples of Event Timing Codes: Following are examples of P-VTEC lines for various events, but specifically illustrating date/time group coding when the event is issued before or within the valid time periods.

ACTION	BEFORE VALID TIME	WITHIN VALID TIME
NEW	/NEW.KRLX.BZ.A.0002.021222T1700Z-021223T0400Z/	N/A (would be CONTINUED)
CONTINUED	/CON.KCLE.LE.A.0357.021018T1500Z-021019T0200Z/	/CON.KCLE.LE.A.0357.000000T0000Z-021019T0200Z/
EXTENDED	/EXT.KLWX.WS.A.0002.030116T1800Z-030116T2200Z/	/EXT.KLWX.WS.A.0002.000000T0000Z-030117T0100Z/
CANCELED	/CAN.KMKX.SN.W.0125.030207T2200Z-030208T0930Z/	/CAN.KMKX.SN.W.0125.0000T000000Z-030208T0930Z/
EXPIRED	N/A	/EXP.KMSO.WC.Y.0009.0000T000000Z-021118T0800Z/
TEST	/TES.KLOT.HT.Y.0000.021208T1430Z-021208T1500Z/	/TES.KLOT.HT.Y.0000.000000T0000Z-0212T261500Z/

Notes:
(1) When a new event is effective upon issuance, the Event Beginning Date/Time group is coded with the release time of the product. For example, if the release date/time is December 14, 2002, 1252 UTC, for a WSW product issued by Weather Forecast Office (WFO) Kansas City/Pleasant Hill, MO, that describes the 4th Freezing Rain Advisory of the calendar year for that office, the P-VTEC line is the following:

/NEW.KEAX.ZR.A.0004.021214T1252Z-021214T1430Z/

(2) The ETN will be set to 0000 for all test products.

3. Examples and Interpretations. Following are examples of P-VTEC lines and interpretations (including the preceding UGC line that defines the affected geographic area and product purge time) for a. a single event within one segment, b. multiple events within one segment, c. a change to an event requiring multiple segments, and d. a complete sample product

a. Single Event (within one segment, with one UGC grouping)

Example (1)

VAZ088>98-261300- (UGC line)
/NEW.KAKQ.FG.Y.0009.021226T0700Z-021226T1400Z/ (P-VTEC line)

Interpretation: Weather Forecast office (WFO) Wakefield, VA issued an NPW for its ninth Dense Fog Advisory (of the calendar year), valid December 26, 2002, from 0700-1400 UTC (P-VTEC line) (for Virginia zones 88 through 98 - from the UGC line).

Example (2)

NDZ002>005-010>013-018>023-221800- (UGC line)
/CAN.KBIS.BZ.A.0002.000000T0000Z-030122T1900Z/ (P-VTEC line)

Interpretation: WFO Bismarck, ND issued a WSW to cancel a Blizzard Watch (the second of the year) on January 22, 2003, effective at 1900 UTC (P-VTEC line) (for North Dakota zones 2-5, 10-13, and 18-23 - from the UGC line).

Example (3)

MSZ049-081400- (UGC line)
/TES.KJAN.HT.W.0000.030408T1415Z-030408T1445Z/ (P-VTEC line)

Interpretation: WFO Jackson, MS issued an NPW for a test Heat Warning on April 8, 2003, valid from 1415-1445 UTC, (P-VTEC line) (for Mississippi zone 49 - from the UGC line).

b. Multiple Events (within one segment, with one UGC grouping)

Example (1)

AZZ022-023-027-028-121630- (UGC line)
/NEW.KPSR.DU.W.0012.031112T1730Z-031113T0300Z/ (P-VTEC ln 1)
/CON.KPSR.HW.W.0009.000000T0000Z-031112T2100Z/ (P-VTEC ln 2)

Interpretation: WFO Phoenix, AZ issued an NPW on November 12, 2003 for two events within the same segment (Arizona zones 22, 23, 27, 28 - from the UGC line): (1) its 5th Blowing Dust Warning, valid from 1730 UTC on November 12 until 0300 UTC on November 13 (P-VTEC line 1), and (2) continued a High Wind Warning (its 9th of the year), valid until 2100 UTC on November 13 (P-VTEC line 2).

c. Upgrade/Downgrade of Events (requires multiple segments)

Example (1) (upgrade part of watch to warning, requires two segments)

(segment 1 of 2 within WSW)
TXZ001>010-180400-(UGC line)
/UPG.KAMA.WS.A.0011.000000T0000Z-031218T0800Z/(P-VTEC ln 1)
/NEW.KAMA.SN.W.0007.031217T2200Z-031218T0800Z/(P-VTEC ln 2)

(segment 2 of 2 within WSW)
TXZ011>020-180400- (UGC line)
/CON.KAMA.WS.A.0011.000000T0000Z-031218T0800Z/(P-VTEC line)

Interpretation: A watch was in effect for WFO Amarillo, Texas zones 1-20. The WFO then issued a WSW upgrading part of the watch (Texas zones 1-10 - from the UGC line, segment 1) to a warning, while the rest of the watch area (Texas zones 11-20, from the UGC line, segment 2) continued unchanged. Two segments are used:

Segment one (Texas zones 1-10): Two P-VTEC lines are used: P-VTEC line (1) provides "closure" of TX zones 1-10 that were originally under the 11th Winter Storm Watch of the year (which was to have expired on December 18, 2003 at 0800 UTC. P-VTEC line (2) begins the upgrade as a new Heavy Snow Warning (the 7th of the year), valid from December 17, 2003 at 2200 UTC to the 18th at 0800 UTC.

Segment two (Texas zones 11-20): The one P-VTEC line continues the Winter Storm Watch (the 11th of the year) for the remaining TX zones 11-20, valid until December 18, 2003 at 0800 UTC.

Example (2) (cancel part of warning, downgrade part of warning to advisory, extend warning into new area - requires three segments)

(Segment 1 of 3 within WSW - cancel part of warning)
MTZ059-061-232200- (UGC line)
/CAN.KGGW.WS.W.0004.000000T0000Z-030323T2200Z (P-VTEC ln)

(Segment 2 of 3 within WSW - downgrade part of warning to advisory)
MTZ016>024-060-062-232200- (UGC line)
/CAN.KGGW.WS.W.0004.000000T0000Z-030323T2200Z (P-VTEC ln 1)
/NEW.KGGW.SN.Y.0008.030323T1600Z-030323T2200Z (P-VTEC ln 2)

(Segment 3 of 3 within WSW - extend warning into new area)
MTZ025>027-232200- (UGC line)
/EXA.WS.W.0004.000000T0000Z-030323T2200Z (P-VTEC line)

Interpretation: A Winter Storm Warning was in effect for WFO Glasgow, Montana zones 16-25 and 59-62. The WFO then issued a WSW cancelling part of the warning (Montana zones 59 and 61- from the UGC line, segment 1), downgrading part of the warning to an advisory (Montana zones 16-24 - from the UGC line, segment 2), and extending the warning in area (Montana zones 26-27 - from the UGC line, segment 3) (while keeping Montana zone 25 in the warning).

Segment 1 (Montana zones 59 and 61): The one P-VTEC line is used to cancel the warning (the 4th of the year) for zones 59 and 61, valid at time of issuance of the WSW product.

Segment 2 (MT zones 16-24: Two P-VTEC lines are used: P-VTEC line (1) cancels the warning for Montana zones 16-24 at time of issuance of the WSW (which was to have expired on March 23, 2003 at 2200 UTC). P-VTEC line (2) "downgrades" the warning for Montana zones 16-24 to a new snow advisory, valid from March 23, 2003 at 1600 UTC until the 23rd at 2200 UTC.

Segment 3 (MT zones 25-27): The one P-VTEC line is used to extend the warning in area to Montana zones 26-27 (in addition to keeping zone 25 in the warning), valid from March 23, 2003 at time of issuance until the 23rd at 2200 UTC.

d. A Complete Sample Product. See NWSI 10-1701 for details of overall product format and headers.

WWUS41 KBUF 300628
WSWBUF

URGENT - WINTER WEATHER MESSAGE
NATIONAL WEATHER SERVICE BUFFALO NY

230 AM EST WED NOV 30 2002

...A LAKE EFFECT SNOW ADVISORY IS IN EFFECT FOR EASTERN LAKE ONTARIO COUNTIES TODAY AND IS EXTENDED THROUGH EARLY TUESDAY MORNING...
...THE WINTER STORM WARNING FOR WESTERN NEW YORK HAS BEEN CANCELLED...

WEST WINDS WILL DEVELOP LATE THIS MORNING AND BRING LAKE EFFECT SNOW TO COUNTIES EAST OF LAKE ONTARIO.

NYZ006>008-3[illegible]1230 (UGC line)
/CAN.KBUF.W[illegible].W.0013.000000T0000Z-021201T1230Z/ (P-VTEC line 1)
/EXT.KBUF.LE.A.0021.021130T1400Z-021201T0700Z/ (P-VTEC line 2)
NORTHWEST COAST-
INCLUDING THE CITIES OF...OSWEGO...WATERTOWN

(TEXT - including repeat of headlines)
$$

(Other segments, as appropriate)

Interpretation: WFO Buffalo, New York issued a WSW on Wednesday, November 30, 2002 at 230 a.m. (for New York zones 6-8 - from the UGC line). The WSW cancelled the Winter Storm Warning (the 13th of the year) that would have been valid until 1230 UTC on December 1 (from P-VTEC line 1). The WSW also extended the Lake Effect Snow Advisory (the 21st of the year), valid until 0700 UTC on December 1 (from P-VTEC line 2).

4. Hydrological (H)-VTEC Format. The specialized H-VTEC line in hydrological products occurs in conjunction with, and immediately after, the P-VTEC line. The Phenomena Code in the P-VTEC that "triggers" an H-VTEC line will be FL for Flood. The H-VTEC specifies the flood severity, immediate cause, timing of flood beginning, crest, and end, and whether the flood will be (near) a record.

4.1 Generic Structure of Elements.

/s.ic.$d_S d_S$hhmm.$d_C d_C$hhmm.$d_E d_E$hhmm.fr/

where "s.ic." and the "fr" describe properties of the flood event, and the $d_S d_S$hhmm.$d_C d_C$hhmm.$d_E d_E$hhmm provides the timing in UTC.

Event Group		Date/Time Group	
s	- Flood Severity	d_Sd_Shhmm	- Flood **Start** Date/Time Group
ic	- Immediate Cause	d_Cd_Chhmm	- Flood **Crest** Date/Time Group
fr	- Flood Record	d_Ed_Ehhmm	- Flood **End** Date/Time Group

Note: '/' and '**.**' in the format are delimiters that separate fields for ease in coding and decoding.

4.2 H-VTEC Element Definitions.

4.2.1 **s** (Flood Severity).

s = N (none)
= 1 (minor)
= 2 (moderate)
= 3 (major)
= U (unknown)

4.2.2 **ic** (Immediate Cause). (The Phenomena Code in the P-VTEC will be FL for Flood.)

ER = Excessive Rainfall
SM = Snow Melt
RS = Rain and Snow Melt
DM = Dam or Levee Failure
GO = Glacial Lake Dam Outburst
IJ = Ice Jam
IC = Rain and/or Snow Melt and/or Ice Jam
UU = Unknown

4.2.3 **$d_Sd_S$hhmm.$d_Cd_C$hhmm.$d_Ed_E$hhmm** (Flood Timing). These groups, respectively, identify the beginning, crest, and end of the flood event by day, hour, and minute in UTC.

4.2.4 **fr** (Flood Record Status).

fr = NO - Record flood is not expected
= NR - Near record or record flood expected
= UU - Flood without a period of record to compare

5. A Complete Sample Product. See NWSI 10-1701 for details of overall product format, headers, and structure.

```
WGUS41 KCAR 241532
FLWCAR
MEZ002-250315-                                          (UGC line)
/NEW.KCAR.FL.W.0003.030424T1530Z-030428T0000Z/           (P-VTEC line)
/1.ER.25T1600.27T0000.28T0000.NO/                       (H-VTEC line)
```

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE CARIBOU ME
1127 AM EDT MON APR 24 2003

...THE NATIONAL WEATHER SERVICE HAS ISSUED A FLOOD WARNING FOR THE ST JOHN RIVER AT FT KENT...

AT 11 AM EDT...THE RIVER STAGE AT FORT KENT WAS 15.33 FEET. FLOOD STAGE IS 20 FEET. THE RECENT HEAVY RAINS HAVE ALLOWED THE RIVER TO RISE. THE RIVER IS EXPECTED TO GO ABOVE FLOOD STAGE AT 11 AM EDT WEDNESDAY APRIL 25 AND IS EXPECTED TO CREST AT 21.1 FEET AT 7 PM EDT WEDNESDAY.

$$

Interpretation: WFO Caribou, ME issued an FLW (the 3rd of the year) on April 24, 2003, valid from 1530 UTC on the 24th to 0000 UTC on April 28th (from the P- VTEC line) (for Maine zone 2 - from the UGC line). The minor flood was caused by excessive rainfall, was not expected to be a record, with the flood expected to begin on April 25th about 1600 UTC, crest on the 27th about 0000 UTC, and end on the 28th about 0000 UTC (from the H-VTEC line).

APPENDIX A - Listing of VTEC Elements

ACTIONS
NEW - NEW EVENT
CON - EVENT CONTINUED
EXT - EVENT EXTENDED (TIME)
EXA - EVENT EXTENDED (AREA)
EXB - EVENT EXTENDED (TIME & AREA)
UPG - EVENT UPGRADED
CAN - EVENT CANCELLED
EXP - EVENT EXPIRED
COR - CORRECTED
ROU - ROUTINE
TES - TEST

SIGNIFICANCE ELEMENTS
W - WARNING
A - WATCH
Y - ADVISORY
S - STATEMENT
O - OUTLOOK
F - FORECAST
N - SYNOPSIS

PHENOMENA
BZ - BLIZZARD
WS - WINTER STORM
WW - WINTER WEATHER
SN - HEAVY SNOW/SNOW
LE - LAKE EFFECT SNOW
BS - BLOWING/DRIFTING SNOW
SB - SNOW AND BLOWING SNOW
IP - SLEET
ZR - FREEZING RAIN
FZ - FREEZE
FF - FREEZING FOG
FR - FROST
WC - WIND CHILL
HW - HIGH WIND
FG - FOG
SM - SMOKE
HT - HEAT
DU - BLOWING DUST
FL - FLOOD
IJ - ICE JAM FLOOD
ER - EXCESSIVE RAINFALL
SM - SNOWMELT
RS - RAINFALL AND SNOWMELT
DM - DAM OR LEVEE FAILURE
GO - GLACIAL DAMMED LAKE OUTB.
SR - STORM
HF - HURRICANE-FORCE MARINE
TR - TROPICAL STORM
HU - HURRICANE
LW - LAKE WIND
LS - LAKESHORE
CF - COASTAL FLOOD
SV - SEVERE THUNDERSTORM
TO - TORNADO
FW - FIRE WEATHER (RFW, FWW)
RH - RADIOLOGICAL HAZARD
VO - VOLCANO
AV - AVALANCHE
TS - TSUNAMI
MA - MARINE (SAW, NWS)
SC - SMALL CRAFT
GO - GALE
UP - ICE ACCRETION
LO - LOW WATER

Note: The VTEC may be included in additional text products in the future. In that event, additional codes would be added to this appendix.